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State Emergency Management Agency (SEMA) Floodplain Management Section

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It's the fourth quarter of Fiscal Year 2020 and time for the fourth FY20 Missouri Floodplain Management E-Bulletin! This issue dedicates three full pages to the National Flood Insurance Program's new pricing methodology: Risk Rating 2.0—Equity in Action. It is important that Missouri Floodplain Administrators be aware of FEMA's transition to Risk Rating 2.0, so that we can better serve Missouri and its citizens. These three pages are intended to introduce the coming changes to the reader. The Missouri Floodplain Management team is learning too, and we will be working with the FEMA Region VII office to host Risk Rating 2.0 training as soon as possible. Please stay tuned as we all learn and become familiar with Risk Rating 2.0 - Equity in Action!

We're always looking for flooding photos, elevated structure photos, projects demonstrating stormwater management techniques and "green" projects, so please share them with us! Be sure to include your name, the location, and the date of the photo. Send photos to: karen.mchugh@sema.dps.mo.gov



Photo: Lynn Welch, Verona, Missouri 2021
Inside a pre-FIRM home after the May flooding event

Silver Jackets Project: Historic Flood Signs!

In 2019 the U.S. Army Corps of Engineers Silver Jackets Program, the State Risk Management Team, and the Missouri State Emergency Management Agency's Floodplain Management Section, collaborated to create historic flood signs to raise awareness of past flooding events. The object of the signs is to help manage flood risk by educating the public about areas that have experienced severe flooding in the past and therefore require special planning for the future. Communities participating in the project include: Carter County, the Cities of Kimmswick, Mokane, Riverside, Roscoe, Slater, Vanduser, and Washington. On May 21, 2021, the Cities of Kimmswick and Washington had unveiling ceremonies (see photos below). The State of Missouri is actively raising awareness of natural hazards, such as flooding through similar efforts: See the Missouri [StormAware](#) webpage.



Cities of Kimmswick (above) & Washington (right)



Important Information for You to Know! Risk Rating 2.0!

FEMA is updating the National Flood Insurance Program's pricing methodology to communicate flood risk more clearly, so policyholders can make more informed decisions on the purchase of adequate insurance and on mitigation actions to protect against the perils of flooding.

The 21st century rating system, Risk Rating 2.0—Equity in Action, provides actuarially sound rates that are equitable and easy to understand. It transforms a pricing methodology that has not been updated in 50 years by leveraging improved technology and FEMA's enhanced understanding of flood risk.

"The new pricing methodology is the right thing to do. It mitigates risk, delivers equitable rates and advances the Agency's goal to reduce suffering after flooding disasters," said David Maurstad, senior executive of FEMA's National Flood Insurance Program. "Equity in Action is the generational change we need to spur action now in the face of changing climate conditions, build individual and community resilience, and deliver on the Biden Administration's priority of providing equitable programs for all."

The National Flood Insurance Program provides about \$1.3 trillion in coverage for more than 5 million policyholders in 22,500 communities across the nation. Understanding the magnitude of even the smallest changes of a program of this scale, FEMA devoted thousands of hours to develop the new pricing methodology to ensure equity and accuracy.

In developing the new rates, FEMA coordinated with subject matter experts from the U.S. Army Corps of Engineers, U.S. Geological Survey and the National Oceanic and Atmospheric Administration along with experts from across the insurance industry and actuarial science to ensure alignment with federal regulations, systems, guidance and policies.

The new methodology allows FEMA to equitably distribute premiums across all policyholders based on the value of their home and the unique flood risk of their property. Currently, many policyholders with lower-value homes are paying more than they should and policyholders with higher-value homes are paying less than they should.

To provide more equity, FEMA now has the capability and tools to address rating disparities by incorporating more flood risk variables. These include flood frequency, multiple flood types—river overflow, storm surge, coastal erosion and heavy rainfall—distance to a water source and property characteristics such as elevation and the cost to rebuild.

The cost to rebuild is key to an equitable distribution of premiums across all policyholders because it is based on the value of their home and the unique flood risk of their property. This has been an industry standard for years.

FEMA is conscious of the far-reaching economic impacts COVID-19 has had on the nation and existing policyholders and is taking a phased approach to rolling out the new rates.

In Phase I: New policies beginning Oct. 1, 2021 will be subject to the new rating methodology. Also beginning Oct. 1, existing policyholders eligible for renewal will be able to take advantage of immediate decreases in their premiums.

In Phase II: All remaining policies renewing on or after April 1, 2022 will be subject to the new rating methodology.

For the latest information on Risk Rating 2.0, visit [fema.gov](https://www.fema.gov).

See the following pages for more on Risk Rating 2.0!

Why FEMA is Undertaking Risk Rating 2.0

FEMA is committed to building a [culture of preparedness](#) across the nation. Purchasing flood insurance is the first line of defense against flood damage and a step toward a quicker recovery following a flood.

Since the 1970s, rates have been predominantly based on relatively static measurements, emphasizing a property's elevation within a zone on a [Flood Insurance Rate Map](#) (FIRM).

This approach does not incorporate as many flooding variables as Risk Rating 2.0. Risk Rating 2.0 is not just a minor improvement, but a transformational leap forward. Risk Rating 2.0 enables FEMA to set rates that are fairer and ensures rate increases and decreases are both equitable.

FEMA is building on years of investment in flood hazard information by incorporating private sector data sets, catastrophe models and evolving actuarial science.

With Risk Rating 2.0, FEMA now has the capability and tools to address rating disparities by incorporating more flood risk variables. These include flood frequency, multiple flood types—river overflow, storm surge, coastal erosion and heavy rainfall—and distance to a water source along with property characteristics such as elevation and the cost to rebuild.

Currently, policyholders with lower-valued homes are paying more than their share of the risk while policyholders with higher-valued homes are paying less than their share of the risk. Because Risk Rating 2.0 considers rebuilding costs, FEMA can equitably distribute premiums across all policyholders based on home value and a property's unique flood risk.

What's Not Changing under Risk Rating 2.0

FEMA is upholding statutory requirements by:

Limiting Annual Premium Increases

Existing statutory limits on rate increases require that most rates not increase more than 18% per year.

Using Flood Insurance Rate Maps (FIRMs) for Mandatory Purchase and Floodplain Management

FEMA's flood map data informs the catastrophe models used in the development of rates under Risk Rating 2.0. That is why critical flood mapping data is necessary and essential for communities. It informs floodplain management building requirements and the mandatory purchase requirement.

Maintaining Features

FEMA is maintaining features to simplify the transition to Risk Rating 2.0 by offering premium discounts to eligible policyholders. This means:

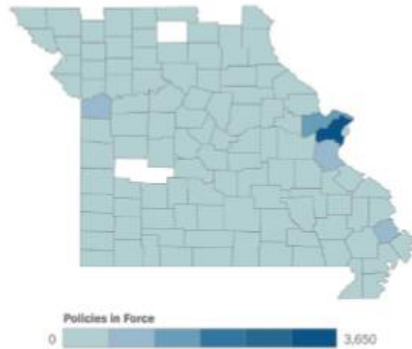
- FEMA will continue to offer premium discounts for pre-FIRM subsidized and newly mapped properties.
- Policyholders will still be able to transfer their discount to a new owner by assigning their flood insurance policy when their property changes ownership.

And, discounts to policyholders in communities who participate in the [Community Rating System](#) will continue. Communities will continue to earn National Flood Insurance Program rate discounts of 5% - 45% based on the Community Rating System classification. However, since Risk Rating 2.0 does not use flood zones to determine flood risk, the discount will be uniformly applied to all policies throughout the participating community, regardless of whether the structure is inside or outside of the Special Flood Hazard Area.

Missouri—Risk Rating 2.0

National Flood Insurance Program in Missouri

NFIP Policies in Force by County in Missouri



A significant part of FEMA's NFIP Transformation is Risk Rating 2.0, which will fundamentally change the way FEMA prices insurance and determines an individual property's flood risk.

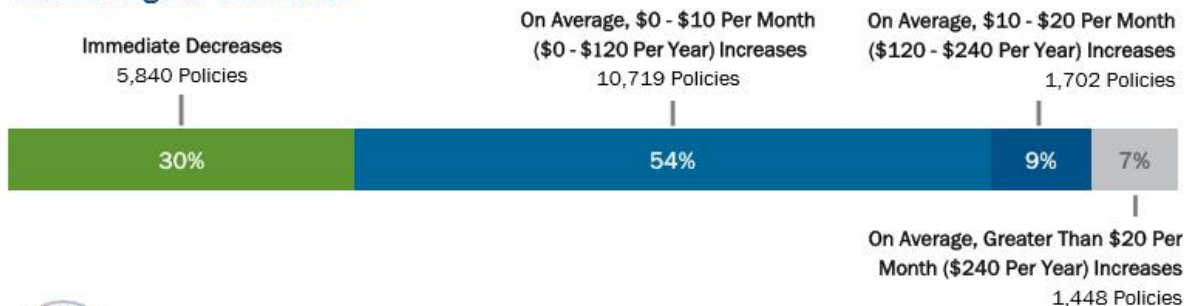
Risk Rating 2.0 is equity in action. With Risk Rating 2.0, individuals will no longer pay more than their share in flood insurance premiums based on the value of their homes. Roughly two-thirds of policyholders with older pre-FIRM homes will see a premium decrease.

FEMA will reduce disaster-related suffering and disaster-related costs in Missouri through insurance and the mitigation of flood risks by leveraging advances in industry best practices, technology, and flood risk modeling.

FEMA's core mission and programs continue to emphasize purchasing flood insurance and pursuing mitigation options to achieve resiliency. While there are many policies in force in Missouri, there are still opportunities to increase participation in the program to improve resilience, as shown in the table below.

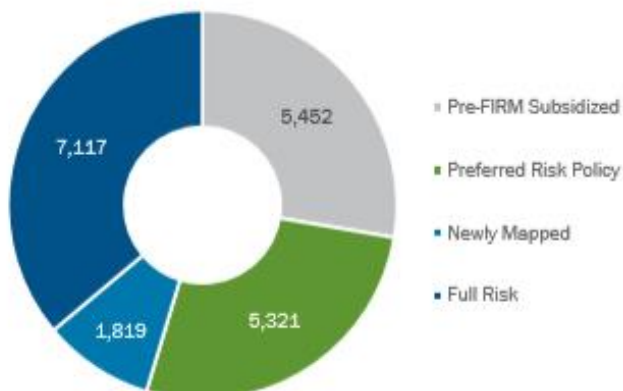
NFIP Policies in Force in MO	Properties in MO Not Covered by NFIP Policy	Average NFIP Claim Payout in MO in the Past 10 Years	Average Individual Assistance Claim Payout in MO in the Past 10 Years
19,700	2.4 million	\$34,000	\$4,700

Risk Rating 2.0 in Missouri



What can you do? Mitigate to Reduce Rates in Missouri

NFIP Policies in Force in MO by Rate Class



The chart to the left identifies policyholders in Missouri who may need the most help to reduce flood insurance rates. They will be paying their true flood risk rate under Risk Rating 2.0, and by implementing mitigation measures while on a glidepath to their full risk rate, they can help reduce their costs.

The state plays a key role in leading those mitigation efforts through coordination and collaboration with communities. States, local communities, tribes, territories, and individuals should prioritize mitigation projects, mitigation planning, and the adoption or strengthening of building codes and zoning regulations to improve resilience and reduce flood insurance rates.

The **2021 Tools of Floodplain Management** workshop is a 2-day course designed for local floodplain administrators. It covers various important issues as well as day-to-day activities, incorporating updated NFIP information and forms. This course is designed to provide basic knowledge of the National Flood Insurance Program. We recommend that those wishing to take the Certified Floodplain Managers exam complete the Tools of Floodplain Management workshop prior to taking the CFM exam.

Listed below is the 2021 schedule:

July 7, 2021 and July 8, 2021

September 15, 2021 and September 16, 2021

The first day of the workshop starts at 1:00 pm and ends at 5:00 pm. The second day runs from 8:00 am to 3:00 pm. The workshops will be held at the Jefferson City Police Department, 401 Monroe Street, Jefferson City, Missouri.



The **SDE 3.0** workshop will be presented in 2021 at several different venues. If you have interest in hosting an SDE 3.0 workshop, please contact Linda Olsen: 573-526-9115.

This workshop has proven valuable in helping communities with the NFIP SDE requirements.

July 22, 2021— Pemiscot County: Steele City Hall Community Center, 101 S. Walnut St., Steele, MO.

August 11, 2021— Newton County: The Civic, 109 W. Main, Neosho, MO.

September 22, 2021— Holt County: Mound City Hall Council Chambers, 205 E. 6th St., Mound City, MO.

October 14, 2021— Marion County Home Bank, 3817 McMasters Ave, Hannibal, MO.

NFIP Training Workshop and the Certified Floodplain Managers (CFM) Exam:

July 15, 2021	NFIP Training Workshop	1:00pm - 5:00pm
July 16, 2021	CFM Exam	9:00am - 12:00pm
Sep. 1, 2021	NFIP Training Workshop	9:00am - 12:00pm
Sep. 3, 2021	CFM Exam	9:00am - 12:00pm
Nov. 18, 2021	NFIP Training Workshop	1:00pm - 5:00pm
Nov. 19, 2021	CFM Exam	9:00am - 12:00pm

The Certified Floodplain Managers Exams are given at the State Emergency Management Agency:
2302 Militia Drive, Jefferson City, MO.
 with the exception of the September 3rd exam. This exam (and the accompanying September 1st NFIP Training workshop) will be given at the Annual MfS-MA Conference. Exam registration must be completed and submitted - with the application fee - to the Association of State Floodplain Managers (ASFPM). The application is available online at: www.floods.org

The SEMA Floodplain Management Team will be working with the FEMA Region VII Insurance Specialist to bring Risk Rating 2.0 training to Missouri Floodplain Administrators. We will contact our community Floodplain Administrator's by email when we have established dates and times for the RR 2.0 training.

In the meantime—the National Flood Insurance Program is hosting a series of webinars on Risk Rating 2.0 this summer. These webinars will bring AGENTS the latest information on how and when Risk Rating 2.0 will be implemented and will discuss key topics. **See the full schedule for June and July and register [here](#).**

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Social Media:



Mission Statement of the Floodplain Management Section:

The mission of Missouri's comprehensive floodplain management program is to make the State and its citizens less vulnerable to the impact of flooding through the effective administration of statewide floodplain management and to provide local communities with the tools and resources for managing, assessing, and planning for development in floodprone areas; to save lives; and to

Other Contact Information

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Do Farm Tiles Increase Flooding? By Paul Osman

In Illinois, community-wide public meetings after flood disasters are common. Angry residents demand to know why they are flooding! At virtually every one of these events, someone stands up and blames farm tiles for the increase in flooding. Heads in the crowd all nod in agreement. It seems to be a commonly held belief in down-state Illinois where many people blame tile drainage for their flood problems. So, let's just cut to the chase. The short answer is that farm tiles do not affect flooding very much, at least within the context of large floods.

Over the years, many researchers have studied this oft-heard complaint about farm tiles. A 2016 University of Iowa study found *"...there exists a threshold rainfall magnitude over which there is minimal effect of subsurface drainage. For smaller events, tiling routes the flow through the subsurface and keeps the soil drier, which increases infiltration and reduces surface runoff while increasing subsurface flow."* Translation: for small non-flood events, farm tiles minimally increase stream flows.

However, the study continues to say: *"For very large storm events, the rainfall magnitude and intensity are so high that surface runoff dominates, irrespective of the antecedent conditions created by the tile drains".* Translation: During heavy rainfall, water runs off on the surface rather than through tiles.

Other researchers in the Midwest have shown much the same thing; that farm tiles minimally increase total stream flow over the course of the year (non-flood conditions). Most of this happens during late spring and summer. There is little debate that tiles have increased average stream flows over the last century. But during heavy rainfall or flood conditions, farm tiles have little or no impact on flooding.

There are likely other reasons for the increased flooding in Illinois. Climate change is causing temperatures to increase, hotter temperatures cause greater evaporation, more evaporation results in heavier rainfalls, and heavier rainfalls cause an increase in flooding. It's not a good time to live in an identified flood risk area. But, farmers and farm tiles are not to blame.

Sloan, B.P., Mantilla, R., Fonley, M. and Basu, N.B., 2017. Hydrologic impacts of subsurface drainage from the field to watershed scale. *Hydrological processes*, 31(17), pp.3017-3028.

Schilling, K.E. and Helmers, M., 2008. Effects of subsurface drainage tiles on streamflow in Iowa agricultural watersheds: Exploratory hydrograph analysis. *Hydrological Processes: An International Journal*, 22(23), pp.4497-4506.